

Remarks

Claims 1-5, 10-15 and 18-23 are pending in the application.

Claim rejections

Section 112, First Paragraph

Claim 22 was rejected under 35 U.S.C. § 112, first paragraph as failing to satisfy the written description requirement. In particular, the Office Action objects to the language of the claim calling for preventing “a failing logical processor from retaining a lock on the semaphore register.” Attention is directed to paragraphs 0058-64 and Fig. 6, element 605, which clearly describes how a failed logical processor is prevented from retaining a lock on a semaphore register (e.g., by allowing a different logical processor to supply the failed logical processor’s LPID so as to release a lock on the semaphore register). In view of the above, the specification as filed provides a written description for the claim limitation. Accordingly, reconsideration and withdrawal of the rejection of claim 22 under 35 U.S.C. § 112, second paragraph is respectfully requested.

Section 103

Claims 1-5, 10-15, and 18-21 were rejected under 35 USC 103(a) as being unpatentable over Hays, Jr. et al. (US Patent No. 4,354,227) (“Hays”) in view of Forman et al. (US 5,544,353). Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hays in view of Forman in further view of Lee et al. (US Patent No. 5,421,002) (“Lee”). The Applicant respectfully traverses the rejection.

Neither Hays nor Forman discloses the features of the claims.

Looking at claim 1, for example, this claim sets forth a semaphore controlling exclusive access to a resource descriptor by a logical processor, and the resource descriptor being used to reserve resources for exclusive use by the logical processor. The cited references, taken singularly or in combination, fail to teach or suggest the semaphore and the resource descriptor as recited in this claim. Both Hays and Forman refer to a resource, and controlling access to the resource via a register value.

As to Hays, the Office Action states that the resource descriptor is shown at Col. 10, lines 9-14 and 22-28. In particular, the Office Action points to the “control register” that is recited in claim 1 of the Hays patent. This control register is used to control whether a processor can access a shared resource. Thus, at Col. 5, lines 32-37, Hays speaks of using a condition code register 24 to indicate whether the desired resource is available or not. In Hays (see, Col. 6, lines 3-11) a processor writes its ID to this register in one clock cycle in an effort to reserve the shared resource (e.g., a memory), and then checking in a later clock cycle for whether in fact the memory has been successfully reserved. As conceded in the Office Action, Hays fails to teach obtaining a lock on a semaphore controlling exclusive access to a resource descriptor, and obtaining exclusive access for said first logical processor to the resource file, if the lock is obtained.

To make up for the deficiencies of Hays, the Office Action relies on Forman. The object of Forman is “to improve master process efficiency by reducing the length of time exclusive control over a master process indicator is required” (col. 2, lines 54-56). To this end, Forman relates to processes “‘racing’ for control of a resource” (col. 4, line 17). A process gets control

of a resource by either creating or updating a shared control file, and becoming “master” of the control file. The invention of Forman purportedly achieves its object by removing the limitation that the master retain exclusive write access to the control file by “allowing the master to release the exclusive write mode while still being the master process for that resource.” See col. 4, lines 54-56. The Office Action specifically cites to Col. 6, lines 9-11 and 13, which again is citing to the claims of Forman. This particular section refers to requesting exclusive access to a file and waiting to try to gain exclusive access to the file. Such is repeated at Col. 5, lines 8-14.

In reviewing Hays and Forman, each reference individually refers to seeking exclusive access to a resource. In Hays, it is through access to a control register. Even assuming, *arguendo*, that Forman refers to a semaphore in Claim 1 or at Col. 5, lines 8-14 (the term is not used in Forman at all), such would be used to control access to a file. In each case, a semaphore or control register is used to control access between two devices to a shared resource. The present specification acknowledges that semaphores are used to control access to a shared resource (see para. 0009). The present specification and claims refer to providing a resource descriptor to reserve a shared resource for a logical processor and a semaphore controlling exclusive access to the resource descriptor. Both Hays and Forman only refer to one item to control access to a shared resource and not the two levels of control present in the pending claims.

In view of the above, it is clear that neither Hays nor Forman contains any suggestion of multiple levels of control of a resource as in the present invention. Accordingly, the combination of Hays and Forman cannot yield the features of the claims. Moreover, there is no motivation

for the combination of Hays and Forman, since they address different objects in different ways, and neither adds anything to the other in furtherance of their particular objects.

All of the independent claims recite elements for multiple levels of control. Claim 1 recites “obtaining a lock on a semaphore controlling exclusive access to a resource descriptor, the resource descriptor describing a usage allocation of resources shared among a plurality of logical processors” and “obtaining exclusive access for said first logical processor to said resource descriptor if said lock is obtained.” Independent claim 10 recites “a resource descriptor to identify a status of said shared resources; and a semaphore to reserve exclusive access for one of said plurality of logical processors to said resource descriptor.” Independent claim 13 recites “setting a lock bit in a semaphore register to reserve exclusive access to a resource descriptor register” and “applying said first bitmap to said resource descriptor register to reserve said first required resource.” Independent claim 18 recites “a resource descriptor to control access to said resources” and “a semaphore register to reserve exclusive access for one of said plurality of logical processors to said resource descriptor.”

The recent Office Action asserts that Forman teaches a shared control file used to write identifying data including the master identity and a timestamp, citing column 5, lines 3-5. It further asserts this shared control file is a resource descriptor. *See* Office Action 5/29/2007, page 11. Applicants disagree.

The cited section states: “The process starts when a processor requests a common resource 150. The existence of a shared control file is tested 152. If no shared control file exists, the process creates one 154, obtains exclusive access, and writes identifying data including the master identity and a timestamp 180.” It describes a process including a request of a *single*

common resource 150. It then describes testing to determine the existence of a shared control file related to the single common resource 150. If no such shared control file relating to that common resource 150 exists, the described process creates one, obtains exclusive access, and writes identifying data to the shared control file.

Applicants submit the cited section including the description of a temporary shared control file dedicated only to a *single* commonly-shared resource is not the same as a resource descriptor, the resource descriptor describing a usage allocation of resources shared among a plurality of logical processors (*e.g.*, as described in claim 1).

The description of Forman confirms that the shared control file does not relate to usage allocation of among resources, but rather is dedicated only to a single “common resource”. *See e.g.*, Abstract, Summary of the Invention, and column 4, lines 15-20. The Forman reference, in multiple places (including the cited section discussed immediately above), describes the creation of the cited temporary shared control file dedicated to a single shared resource that is discarded in favor of a new one when the old one becomes “stale”. *See e.g.*, column 5, line 23. Clearly, this is not the same as a resource descriptor that describes *usage allocation* amongst various resources. Indeed, the cited shared control file does not relate to usage allocation amongst various resources at all. As such, Applicants submit the current rejection is lacking and should be withdrawn.

Lee fails to make up for the deficiencies of Hays and Forman. Lee refers to redundant busses and does not in any way teach or suggest the multiple levels of controlling access to a resource as recited in each of the pending claims.

In view of the above, withdrawal of the asserted rejection is respectfully requested.

Conclusion

In light of the above discussion, Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (408) 975-7500 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,
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